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Forestry-Riparian, Decision Rationale

Protection of Riparian Areas: Oregon relies on both regulatory and voluntary measures to provide riparian protections for medium and small fish bearing streams (type "F" streams) and non-fish bearing streams (type "N" streams). Generally, under the current Forest Practices Act (FPA) rules, on private forest lands, no tree harvesting is allowed within 20 feet of all fish bearing streams as well as medium and large non-fish bearing streams. Also, all snags and downed wood that don't represent a safety or fire hazard, must be retained within riparian management areas around small and medium fish bearing streams that measure~~,~~ 50 and 70 feet, respectively. In addition, the FPA rules establish basal area targets for some riparian management areas. For example, along medium fish bearing streams, there is a minimum tree number requirement of 30 trees per 1000 feet. The ~~state has~~FPA rules impose no harvesting restrictions around small non-fish bearing streams.

The ~~s~~State explains that, in addition to regulatory requirements, voluntary measures for high aquatic potential streams (i.e., streams ~~defined as having a~~ with low gradients and wide valleys where large woody debris recruitment is most likely to be effective at enhancing salmon habitat) also ~~are also~~ have been ~~-~~adopted by the forestry industry to protect riparian areas. These voluntary measures include large wood placement, retaining additional basal area within stream buffers, large tree retention, and treating large and medium sized non-fish streams the same as fish streams for buffer retentions.[1]

Commented [EPA1]: Are there any incentives associated with these? Grant funds? Relief from other requirements? Anything?

However, based on the results of a number of studies including those summarized in the following paragraphs, NOAA and EPA find that the additional management measures, beyond those ~~state's existing measures~~ in FPA rules (and the voluntary program), for forestry riparian protection around medium and small fish bearing streams and non-fish bearing streams are necessary to attain and maintain ~~do not adequately protect~~ water quality standards and to protect designated uses. Therefore, per the condition on the federal agencies earlier approval of ~~placed on~~ Oregon's coastal nonpoint program under CZARA, the ~~s~~State must still ~~needs to~~ adopt additional management measures ~~for~~applicable to the forestry land use and forested areas ~~that provide better~~in order to protect~~ion of riparian areas for~~ small and medium fish bearing streams and non-fish bearing streams from pollution attributable to forestry practices in riparian areas.

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A significant body of science, including: 1) the Oregon Department of Forestry's (ODF) Riparian and Stream Temperature Effectiveness Monitoring Project (RipStream)[2]; 2) "The Statewide Evaluation of Forest Practices Act Effectiveness in Protecting Water Quality" (i.e., the "Sufficiency Analysis")[3]; and 3) the Governor's Independent Multidisciplinary Science Team (IMST) Report on the adequacy of the

[1] According to Oregon's March 2014 coastal nonpoint program submittal, information on voluntary efforts was reported to the Oregon Watershed Restoration Inventory. http://coastalmanagement.noaa.gov/nonpoint/oregonDocket/StateofOregonCZARAsubmittal3-20-14.pdf

[2] Three peer-reviewed articles present the results of the RipStream analysis:

Dent, L., D. Vick, K. Abraham, S. Shoenholtz, and S. Johnson. 2008. Summer temperature patterns in headwater streams of the Oregon Coast Range. Journal of the American Water Resources Association 44: 803-813.

Groom, J.D., L. Dent, and L.J. Madsen. 2011. Stream temperature change detection for state and private forests in the Oregon Coast Range. Water Resources Research 47: W01501, doi:10.1029/2009WR009061.

Groom, J.D., L. Dent, and L.J. Madsen. 2011. Response of western Oregon stream temperatures to contemporary forest management. Forest Ecology and Management, doi:10.1016/j.foreco.2011.07.012

[3] Oregon Department of Forestry and Oregon Department of Environmental Quality. 2002. Sufficiency Analysis: A Statewide Evaluation of Forest Practices Act Effectiveness in Protecting Water Quality, Oregon Department of Forestry and Oregon Department of Environmental Quality. October 2002.

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Oregon forest practices in recovering salmon and trout[4], indicates that ~~continues to document the need for greater~~ riparian protection around small and medium fish bearing streams and non-fish bearing streams in Oregon is not sufficient to protect water quality and beneficial uses. The federal agencies relied on each of these studies in proposing to determine that the State had failed to submit an approvable program on the basis of this condition. The 2002 Sufficiency Analysis found that the FPA's riparian buffer protections for small and medium fish bearing streams may cause short-term increases in water temperature for some of these streams. [insert page citation] As early as 1999, the IMST study found that the FPA rule requirements related to riparian buffers and large woody debris needed to be improved due to [elaborate on the shortcoming identified]. [insert page citation] Based on their scientific analysis, the team concluded that the existing regulatory approach and voluntary measures were~~as~~ not sufficient for the recovery of wild salmon due to/because [...].[insert page citation] The IMST ~~study~~ recommended that non-fish bearing streams ~~should~~ be treated no differently from fish-bearing streams and~~,~~ the same buffer requirements ~~should~~ apply to both stream types because [...]. [insert page citation] The ~~study~~ IMST also recommended an increase in basal area and requirements for riparian management areas for both small and medium streams, regardless of the presence of fish. [insert page citation] It also recommended that ~~Requirements for~~ the number of trees within the riparian management area also ~~should~~ be increased for both fish and non-fish bearing small and medium streams. [insert page citation]

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Commented [EPA5]: Add a sentence or maybe drop a footnote to explain this because it is not otherwise intuitively obvious.

The 2011 RipStream reports found that FPA riparian protections on private forest lands did not ensure achievement of the Protection of Cold Water criterion (PCW) for the ~~state~~Oregon water quality standard for temperature. [insert page citation] The PCW criterion prohibits human activities, such as timber harvest, from increasing stream temperatures by more than 0.3 ºC at locations critical to salmon, steelhead or bull trout. Specifically, the RipStream analysis found there was a 40 percent increase in the probability that stream temperatures would exceed the PCW criterion for small and medium fish bearing streams in the Oregon Coast Range. [insert page citation] The study found that timber harvest conducted on ~~s~~State-owned forest lands, where greater riparian protections are required, ~~did meet~~ met the PCW requirements.[5] [insert page citation] In addition, most of the privately-held and ~~s~~State forest land parcels analyzed for the study had greater no-cut buffers than required under the FPA. [insert page citation] The RipStream analysis found that greater temperature increases occurred on private sites that had riparian no-cut buffers approaching the FPA rule requirements. [insert page citation] The study attributed the increase in temperature was likely due to shade loss and that both riparian canopy levels and tree height determined the amount of shading provided to a stream. [insert page citation]

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Oregon has also been investing in three paired watershed studies[6]. These studies are designed to analyze the effects of timber harvesting on a watershed and reach scale. Several groups have cited the paired watershed study as evidence that the current FPA practices for riparian protection are effective

[4] Independent Multidisciplinary Science Team. 1999. Recovery of Wild Salmonids in Western Oregon Forests: Oregon Forest Practices Act Rules and the Measures in the Oregon Plan for Salmon and Watersheds. Technical Report 1999-1 to the Oregon Plan for Salmon and Watersheds, Governor's Natural Resources Office, Salem, Oregon.

[5] In Oregon, timber harvests on state forest land need to preserve a 25 foot no-cut buffer and an overall riparian management area of 170 feet. Limited harvest is allowed within 100 feet of the streams to achieve mature forest conditions and throughout the rest of the riparian management area, a density of 15 to 70 trees per 1000 feet must be maintained.

[6] http://watershedsresearch.org/watershed-studies/

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at achieving water quality standards and protecting designated uses. Unpublished preliminary data from the Hinkle Creek study indicate that changes in stream temperature after timber harvesting along non-fish bearing streams were variable. [insert page citation] In addition, there was no measureable downstream effect on temperatures.[7] [insert page citation] However, ~~as Kibler (2007) notes,~~ the variation in stream temperature and overall net observed temperature decrease may be attributable to increased slash debris along the stream after harvest, as well as a likely increase in stream flow post-harvest that could prevent an increase in temperature~~s~~ and contribute to lower mean stream temperature~~s~~.[8] [insert page citation] Therefore, there may be other factors at play that make it difficult to draw any definitive conclusions about the adequacy of the FPA practices from their results. In DEQ's evaluation of the study results, staff concluded that temperature data from the Hinkle Creek and Alsea River studies show that for fish-bearing streams, temperature increases downstream from the harvest sites were very similar to the increases found in the RipStream study.[9] [insert page citation]

Commented [EPA11]: The footnote suggests there is a document to cite. Better to cite the document rather than the people.

NOAA and EPA note that the ~~s~~State is working to address some of the inadequate riparian protection measures in the FPA rules (?). The Oregon Board of Forestry (Board) has the authority to regulate forest practices through administrative rule making and could require changes to the FPA rules to provide for greater protections for small and medium fish bearing streams. The Board, recognizing the need to better protect small and medium fish bearing streams, directed ODF to undertake a rule analysis process that could lead to revised riparian protection rules. At its September 2014 meeting, the Board voted unanimously in favor of continuing to analyze what changes might be needed in the Oregon Forest Practice Rules to provide greater buffer protection~~s~~ for medium and small fish bearing streams on private forest lands. Studies have shown that when applying FPA buffers to these waters, temperatures will increase above the ~~State's "Protecting Cold Water"~~PCW criterion 40% of the time. [insert page citation] NOAA and EPA encourage the ~~s~~State to move forward with this rule making process expeditiously. Until FPA rule changes are adopted, the federal agencies ~~cannot~~would not consider them as part of the ~~s~~State's coastal nonpoint program submission.

Commented [EPA12]: Acknowledge?

~~However, even if the Board does adopt enhanced measures for small and medium fish bearing streams that are designed to meet water quality standards,~~ NOAA and EPA remain concerned that the Board and ODF are not ~~considering~~proposing increased protection for riparian areas around non-fish bearing streams. As previously discussed in the IMST study, non-fish bearing streams should be treated no differently from fish-bearing streams [insert page citation] ; the same buffer requirements should apply to both stream types. Therefore, the ~~s~~State should also ~~must~~ identify and adopt additional management measures necessary to protect small non-fish bearing streams to ensure attainment of water quality standards and designated uses.

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[7] Watersheds Research Cooperative 2008. Hinkle Creek Paired Watershed Study. http://oregonforests.org/sites/default/files/publications/pdf/WRC_Hinkle.pdf

[8] Kibler, K.M. 2007. The Influence of Contemporary Forest Harvesting on Summer Stream Temperatures in Headwater Streams of Hinkle Creek, Oregon. Thesis for the degree of Master of Science in Forest Engineering presented on June 28, 2007. Oregon State University. http://watershedsresearch.org/assets/reports/WRC_Kibler,Kelly_2007_Thesis.pdf

[9] Seeds, J., Mitchie, R., Foster, E., ODEQ, Jepsen, D. 2014. "Responses to Questions/Concerns Raised by Oregon Forestry Industries Council Regarding the Protecting Cold Water Criterion of Oregon's Temperature Water Quality Standard", Oregon Department of Environmental Quality and Oregon Department of Fish and Wildlife Memo. 06/19/2014

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